



The GARzette



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The Official Newsletter of the Gwinnett Amateur Radio Society

Inside

President's Message	2
GARS Repeaters and Other Communications	3
GARS HELP WANTED	3
GARS Meetings & Workshops	4
GARS Happenings	5
Net Managers Corner	5
GARS Recognitions	6
The 2022 Dayton Hamvention	7
General HamCram July 30 and 31	8
The Dacula Parade	9
Upcoming GARS Field Day	10
Drake TR7 Transceiver – Part 2	11
GARS Membership	16
GARS Meeting Minutes	18
Events – GARS and others	19
Local Ham Radio Exams & Meetings	21
GARS Supporters	22



www.GARS.org



TechFest

**GARS January Exhibition of the
Technical aspects of Amateur Radio
held at the [Gwinnett County
Fairgrounds](#)**

**Don't forget to support our
advertisers at the back of the
GARzette.**

**GARS Meeting: Field Day Ice Cream Preparations
Tuesday June 14, 2022 at 7:00 PM**

President's Message

From the President...

The **Dacula Memorial Parade** was a hit and everyone seemed to perform their tasks perfectly.

It was good to see things come together without really needing the portable repeater too much. Many thanks to the 30 club members who came out to conduct this parade in an orderly manner. Also, a great many thanks from GARS to Earl, AF4FG for organizing and leading this long-time effort.

Atlanta Ham Fest was this past weekend and we had a decent showing of GARS members there. Thanks to Earl, AF4FG and Dallas, N4DDM for running and conducting the Ham Fest Antenna launch contest. We had a few contesters who were up for the challenge.

The Atlanta Ham Fest, also, presented a couple of real nice awards and GARS did really well. The GARS Club was awarded the '**ATLANTA HAM FEST GEORGIA CLUB OF THE YEAR**'. You all should be proud of that. I know I am. Any club is nothing, without its members and volunteers. We thank the **Atlanta Radio Club** for offering up and presenting this wonderful award to us. See this beautiful award on our web site at [2022 Atlanta Hamfest GEORGIA CLUB of the YEAR](#) See elsewhere in this newsletter for more information.

In addition to our Club award, there was a **2022 Atlanta Hamfest Educator of the Year** Award as well. Our own **Ralph Pickwick, KJ4CNC** was presented this well-deserved honor. See this beautiful award on our web site at [2022 Atlanta Hamfest EDUCATOR of the YEAR](#)

Thank you, **Atlanta Radio Club** for recognizing one of our hard-working volunteers.



Congratulations to Ralph! See elsewhere in this newsletter for more information.

Field Day will be upon us in a couple of weeks, and band conditions are looking decent enough for us to expect some good propagation. So come on out and grab a Key, microphone or keyboard, and help us to create a great score. We're there for 24 fun hours of Ham

Radio operating fun.

** And don't forget, we have a wonderful family meal planned for Saturday Night. **

Dayton Hamvention

Well, I finally took the plunge and attended a Hamvention for its 70th year anniversary. **What a Hamfest!** I took a lot of pictures. But pictures alone just cannot capture the enthusiasm of folks running around seeing all the deals on things they just cannot live without. This includes seeing friends they have not seen in some time.

I personally saw numerous GARS folks up there and met many nice fellow ham radio operators as besides. Seeing some of the club booths with their information and seeing many outfitted vehicles was quite the treat. There were serious dollars put into some of those club and emergency communications set ups.

See pictures on our [groups.io. <2022 - HAMVENTION>](#)

See you all for Ice Cream.

73,

Joe Biddle, AD4PZ

Club President



Dayton Hamvention Picture by Joe Biddle, AD4PZ



The

GARzette

GARS Repeaters and Other Communications

<u>2 Meter Repeaters</u> 147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2 <u>1.25 Meter Repeater</u> 224.580(-) MHz Tone 100.0, 1.6 MHz Offset <u>70 Cm Repeaters</u> 444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100	<u>6 Meter Repeater</u> 53.110 (-1 MHz) No Tone (Offline for Maintenance) Other Resources: <u>APRS</u> 144.390 -- 1200 Baud W4GR <u>D-STAR</u> WD4STR 145.060 + (1.4 MHz) 440.550 + (5 MHz)	6M Currently down 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs 442.325 Operational in Buford 444.525 Operational in Snellville Link remote receivers being added
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Notable Web Links

Ham Radio Glossary: <https://noji.com/hamradio/glossary.php> a very comprehensive listing provided by Noji Ratzlaff KNØJL. On his site there is also a lot of information about getting started in ham radio.

Need Help – Let GARS Elmers answer your questions

Send an email to elmers@gars.org with the subject listing the area (like Antennas, Repeaters, Digital, DMR etc.) of your query to get to GARS Elmer volunteers.

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Karen KI4HPP and Kyle W4KDA who print copies for distribution at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.

For additional information view our Website at: <http://www.gars.org>

Newsletter Email: editor@gars.org Editor: Bob Hoffmann, K4CQO Assistant Editor: Bill Eggers, WB2RIS

GARS HELP WANTED

Speakers Needed for GARS Workshop Presentations, 3rd Tuesday of the month – Email workshop@gars.org to volunteer. [PS— Articles to publish in the *GARzette*, either written by GARS members or published elsewhere, are always welcome. —Ed.]

GARS Meetings & Workshops

GARS Meetings and Workshops are held in-person at the EAA 690 Hangar, 690 Airport Rd, Lawrenceville, GA 30046.

Meetings and Workshops are OPEN to all, feel free to share your invite with others.

Zoom login info will be posted to <http://www.gars.org> prior to the meeting.

When events are available on Zoom

- Workshops and Meetings will be **recorded**. By participating you consent to being **recorded**.
- Please change your display name to Your **FirstName Call Sign**, e.g. **Hiram W1AW**
- [How to change Your Display Name in Zoom](#)
- Please stay muted until ready to speak. Your space bar works like a PTT for un-muting
- To be fair to everyone, there will be a three minute limit for each person during Q & A
- You may ask questions in chat; **please stay on topic while using chat.**

GARS Meetings Schedule (second Tuesday @ 7:00 PM): (these are the presentations)

- June 14, 2022 - Final Preps for GARS Field Day
- July 12, 2022 - How to build a 4-element, 2m, Cubical Quad Antenna - Dallas N4DDM
- August 9, 2022 - Winlink email via Amateur Radio - Mark Bell N7GRB
- September 13, 2022 - **OPEN**
- October 11, 2022 - GARS Show-n-Tell - The Hand-on Workshop
- November 8, 2022 - PiStar DMR Hot Spot - Mark Prichard KN2TOD
- December - GARS Holiday Party

Workshop Schedule (third Tuesday @ 7:00 PM): (these are the Hand-on Workshops)

- June 21, 2022 - Final Preps for GARS Field Day
- July 19, 2022 - How to build a 4-element, 2m, Cubical Quad Antenna - Dallas N4DDM
- August 16, 2022 - Winlink email via Amateur Radio - Mark Bell N7GRB
- September 20, 2022 - **OPEN**
- October 18, 2022 - GARS Show-n-Tell - The Hand-on Workshop
- November 15, 2022 - PiStar DMR Hot Spot - Mark Prichard KN2TOD
- December - GARS Holiday Party

GARS Meeting – June 14, 2022



Field Day Preparations

**David Adcock KA4KKF -
Field Day Chairman**

We will meet at Harbins Park, [Luke Edwards Road in Dacula](#) (our Field Day site). This will be an Ice Cream Social and BYOB (Bring Your Own Brown Bag) dinner.

Topic will be Field Day and will focus on Station Captains, Equipment Needs, Fuel for the Generators, Fuel for the Setup, Tear Down, and, Night Crew, also known as Dinner, Breakfast, and Refreshments, and then there is Staffing the Stations for 24 Hours.

GARS Workshop – June 21, 2022

Final Preparations for Field Day

We will focus on last minute equipment needs and maybe go through the setup of N3FJP for the logging PCs. If this is your first Field Day or feel you need a refresher we can go over how to make contacts and get them into the log.

This will be an in-person Workshop at the EAA 690 Hangar.

GARS Happenings

20 Years ago in the June 2002 GARzette:

- In 2002, GA ham radio license plates did not have any additional fees
- GARS helped the scouting troupe obtain their Radio Merit Badge using one of the GARS repeaters
- There was an interesting article educating the public about Amateur Radio and recruiting new hams

You can always browse the GARzette archive at <http://www.gars.org/newsletters> and go directly to the 2002 GARzette by clicking on the image. 73, Bob, K4CQO, GARzette Editor



Health and Wellbeing – Sandy Jackson, KJ4DRO

Look for this resource on [gars.org](http://www.gars.org) and use it as a means to convey information about a GARS family member or Silent Key notification.

Net Managers Corner

Monday Night 2 Meter “Want, Swap, Sell, and Information Net”

GARS NEEDS MEMBERS TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club with the membership and awards to prove it. Our club is very busy and active, and we use the Monday night net to get timely information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people who make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

Out of almost 300 members, there are only seven operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

Don – KW4AL

Ray – N4GYN

Bill – WG9NUW

David – KA4KKF

Glen – W3WWT

Russell – AB4QQ

Chuck – KK4TKJ

Charlie – WS4TOT

As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club. The “Want, Swap, Sell Information Net” begins promptly at 19:30 every Monday night and runs about 30 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact me (Chuck) at KK4TKJ@arrl.net. Sign up to help support the effort that makes GARS the great club that it is. 73 and see you on the Nets!

GARS Recognitions

2022 Atlanta Hamfest - Georgia Club of the Year Award

The **Gwinnett Amateur Radio Society W4GR** was founded 39 years ago by amateur radio operators from The Scientific Atlanta Radio Club who lived in Gwinnett County. An ARRL affiliated club, it is now one of the largest and most active amateur radio clubs in Georgia. The club focuses on education, service, and communications. GARS members can be found busily serving youth, scouting, and even the more seasoned folks in the hobby through license testing, classes, workshops, ARES, parade communications, supporting school clubs, and a host of other activities.

GARS is well known for their January TechFest event where all facets of amateur radio are on display to the community.

The club maintains an involved presence in The American Radio Relay League as several members have stepped up to roles that help promote Amateur Radio.

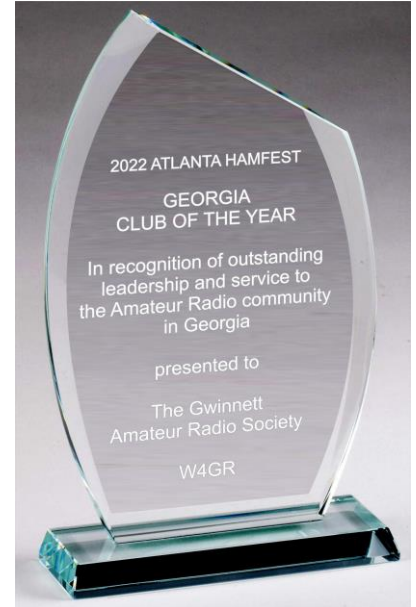
On behalf of The 2022 Atlanta Hamfest Committee, **Congrats.**

2022 Atlanta Hamfest - Educator of the Year Award

Congratulations to Amateur Radio educator **Ralph Pickwick, KJ4CNC**, the first recipient of the newly established "Educator of the Year Award" to be presented at the 2022 Atlanta Hamfest. The award, to be given annually, recognizes outstanding dedication in educating and advancing today's youth about ham radio.

Ralph is registered with the ARRL as a License Instructor and contributes a great amount of time and talent to the Gwinnett Amateur Radio Society as it provides education and training to the community. He currently serves as McConnell Middle Schools Outreach Coordinator in Gwinnett County where he has been supporting the staff and students in many aspects of Amateur Radio. Ralph also keeps tabs on radio and STEM activities at Archer High School and Mason Elementary. He has been awarded Student Teacher Status at McConnell Middle School because of his work.

Congratulation Ralph KJ4CNC and thank you for your dedication to advancing the art of ham radio in the community.



The 2022 Dayton Hamvention

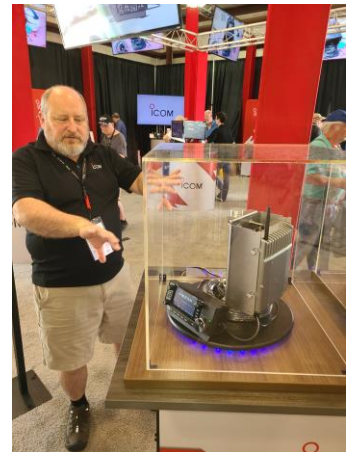
Hamvention Experience – Dave Slotter, W3DJS

After a rocky start getting to Xenia, OH, involving a missed flight and an unpleasant hotel experience I finally arrived at my first Hamvention® on early Saturday AM, parking at the Xenia High School as the helpful hams on the 2 meter Talk-In were recommending parking there as well as the town center due to wet grass and mud on the fairgrounds parking lot making ingress and egress challenging. After parking at the high school, we were given shuttle bus rides to the fairgrounds – in the actual Xenia school buses driven by their everyday bus drivers. (I made sure to tip my drivers.) Did school buses get smaller on the inside, or did I get larger?

Finally making my way into the long-awaited event, I walked past a number of sellers in the flea market and made my way to the large structures. Spread across all the buildings were all the big names that you expect from amateur radio were present – ICOM, Yaesu, Kenwood, Flex, DX Engineering, Ham Radio Outlet, Gigaparts, ARRL and more were in attendance with absolutely large and impressive booths. And of course a great number of smaller vendors and clubs were present as well.

The crowds were substantially large and it took a lot of patience to make my way around to visit the different booths. According to Dayton Hamvention®, there were 31,367 attendees this year, bringing somewhere in the neighborhood of \$33 million in revenue to Xenia and surrounding communities. As I had some fliers to pass out for the Atlanta Hamfest and also for my open-source HamPi project, I got to speaking to the folks at the different booths, such as the Collins Collector Association.

One of the neat products I saw was a prototype super-high frequency radio from ICOM (pictured) which of course was under glass next to an upcoming ICOM amplifier (not pictured). From what I understood, this radio was more than 18-24 months out and was more of a concept radio. I gathered from that, that ICOM is trying to determine the potential market interest. So if you want a 2 and 5 GHz radio on the underused ham bands, please feel free to reach out to ICOM.



I did get the chance to see a couple forums on Sunday morning, and one of those was the grounding and bonding talk, by none other than H. Ward Silver, N0AX, the author of the ARRL *Grounding and Bonding* book. I am grateful that I sat in, because while I understood the necessities of grounding, I had gaps in my knowledge of bonding, and learned that bonding was a necessity when dealing with multiple different voltage potentials.

Besides making it out to the flea market where I purchased a number of tubes for a 1933 Stewart-Warner AM tombstone style radio I've been wanting to restore, I also met up with a number of other hams, including Josh Nass, KI6NAZ of Ham Radio Crash Course YouTube Channel and David Benoist, AG4ZR,



the current ARRL Section Chief for the Georgia section of the ARRL, as well as his predecessor, Gene Clark, W4AYK, who sadly told me it was likely his last time attending Hamvention® due to his advanced age. I also met John Hays, K7VE of Northwest Digital Radio who was in the ARDC booth with his colleagues discussing amateur radio digital communication grants. Finally, I met up with a couple other hams, Alan Sines, W3AL and Daniel Fox, KF9ET from the HamPi discussion group on groups.io and heard some interesting stories from both gentlemen. It was very fulfilling to meet up with some of the users of the HamPi project in person!

Aside from my rocky start, I very much enjoyed my first trip to Dayton Hamvention® and am already looking forward to attending next year and arriving early enough to enter the gates at 8AM Friday. (And I will drive next time.)

Hamvention Experience – Mitch Matteau, N0DIM

Hamvention led to mixed emotions for me. It was great to see some of my GARS friends – ND4V, KM4LAO, WB4WTN, & W4DTR come to mind. Had a great chat with Ruth and introduced her to my friend VA3EGY who is also active with YOTA. The weather was better than most years, except for late Saturday afternoon when the lightning came a bit too close for comfort and vendors lost the ability to process credit cards (internet down?). As usual, the shuttle buses were well organized and we hardly waited a minute to move after boarding.

The forums I attended were well done and well attended (the POTA forum was standing room only!). My disappointment was with the vendor supplies. I had a list of several items that I had been holding off purchasing so that I could pick up from Dayton, however, the big items on my list were out of stock by the time I got to the vendors on Saturday. One vendor had sold out his entire stock on Friday, and the other vendor had no stock “for months” on another item. I did manage to pick up a few small items however, so did not go home empty handed. All in all, I was satisfied with the day though, so no hard feelings. I highly recommend attending Hamvention to anyone who has never attended Dayton.

General HamCram July 30 and 31

GARS GENERAL LICENSE HAMCRAM CLASS



WHEN: Saturday 7/30/2022 and Sunday 7/31/2022; 8:00am to 4:00pm each day, exams start at 4:00pm Sunday.

WHERE: EAA 690 Hangar, Gwinnett County Airport – Briscoe Field, [690 Airport Rd, Lawrenceville, GA 30046](#)

MORE INFO: To register for our 2-day General License HamCram Class, use our registration form in the left column. Pre-registration is REQUIRED. No Walk-ins accepted. This fee is non-refundable. Our \$25 fee covers the class and lunch both days, and the exam fee for the exam given Sunday at 4:00pm. Lunch will be brought in to save time.

We will be using the [Ham Radio School General License Study Guide](#) for this class. You can purchase the study guide locally at Ham Radio Outlet in Doraville, or purchase the book online at HamRadioSchool.com. We encourage you to at least look over the material in a study book and take some practice tests. We will go over every question in the General class question pool during the class, but remember that the test will only be 35 multiple choice questions. If you get 26 out of the 35 questions correct, you will pass the test. We suggest that you take some practice tests prior to the class to familiarize yourself with the question format and some of the material. Go to [our exam page for sample online tests towards the bottom](#) on GARS.org.

QUESTIONS: Questions about the class or the exam session — [click here](#) to email the instructors.

The Dacula Parade

Many thanks to those who came out and helped at the Dacula Memorial Day Parade this year. Boy did we see a lot of things this year that we haven't seen for a long time. Things like 400 high schoolers dancing in unison to music before the parade started (and 200 parents who couldn't get it right.) Things like a low boy trailer that could barely make the turns on the parade route. Things like people with their hats over their heart while 324 marchers carried signs honoring those from Georgia who died for our country. Like the GARS vehicle carrying veterans and honoring Rich Arland, K7SZ.

All in all it was a successful parade and we helped make it so. The 30 GARS members who participated are due a lot of thanks.



Earl	AF4FG	Steve	WB2OGY	Danny	KI4KXO
David	KA4KKF	Andre	W7ALS	Martha	KN4DML
Russell	AB4QQ	Ricardo	W4RMC	Don	KW4AL
Dallas	N4DDM	Bill	WB4WTN	Ryan	KJ4DRN
Pam	WB4AKQ	Chuck	KK4TKJ	Kyle	W4KDA
Ralph	KJ4CNC	Dave	W4DTR	Karen	KI4HPP
Bob	K4QCO	Vicki	N4VLB	Emory	
Joe	AD4PZ	Jamie	KX4HA	RICK	N4XYY
Fisher	W4LON	Bill	WG9NUM	GLEN	W3WWT
Chris	KO4QBC	Paul	W4KLY	KEVIN	KK4WOG



Upcoming GARS Field Day

Field Day is ham radio's open house. Every June, more than 40,000 hams throughout North America set up temporary transmitting stations in public places to demonstrate ham radio's science, skill and service to our communities and our nation. It combines public service, emergency preparedness, community outreach, and technical skills all in a single event. Field Day has been an annual event since 1933, and remains the most popular event in ham radio.



Field Day is a picnic, a campout, practice for emergencies, an informal contest and, most of all, FUN! It is a time where many aspects of Amateur Radio come together to highlight our many roles. While some will treat it as a contest, other groups use the opportunity to practice their emergency response capabilities. It is an excellent opportunity to demonstrate Amateur Radio to the organizations that Amateur Radio might serve in an emergency, as well as the general public. For many clubs, ARRL Field Day is one of the highlights of their annual calendar.

The contest part is simply to contact as many other stations as possible and to learn to operate our radio gear in abnormal situations and less than optimal conditions. We use these same skills when we help with events such as marathons and bike-a-thons; fund-raisers such as walk-a-thons; celebrations such as parades; and exhibits at fairs, malls and museums — these are all large, preplanned, non-emergency activities.

But despite the development of very complex, modern communications systems — or maybe because they ARE so complex — ham radio has been called into action again and again to provide communications in crises when it really matters. Amateur Radio people (also called “hams”) are well known for our communications support in real disaster and post-disaster situations

GARS is participating again in the ARRL Field Day activities. GARS will operate 8 stations along with information about the GARS organization and plenty of members available for conversation and getting to know what ham radio is all about.

ARRL Field Day is coming up fast, June 25 and 26.

GARS will be at [Harbins Park, Luke Edwards Road](#), Dacula, GA again this year.

Plan your time for the fourth full weekend in June to be at Field Day 2022.

Please let GARS know if you will attend our Field Day, and whether you will be at dinner so that we may get an accurate count for ordering dinner. Your family is invited to dinner too. Please indicate how many will attend dinner on the spreadsheet. If you can volunteer for bringing a radio or performing a specific task, please indicate that as well on the spreadsheet.

[Click here to open our Google Spreadsheet to sign up.](#)

We are on the [Field Day site locator](#) map. Share this link with friends and family so they can join us, and if they are out of town maybe they can find a Field Day site near them.

Drake TR7 Transceiver – Part 2

Vintage Amateur Radio

de Bill Shadid, W9MXQ



This month we are staying a little longer in the 1980's with the R. L. Drake Company of Miamisburg, Ohio. Last month we covered the revolutionary, for Drake and the ham radio industry, TR7 High Frequency SSB/CW/AM General Coverage Transceiver. This month we move on in discussion of the conversion scheme of the TR7, its major, but rather rare, partner receiver, the R7, and a bit into how the market changed before Drake's eyes. We will also touch on an ill-fated attempt to step into a lower cost market with the TR5 Transceiver. In an upcoming third installment we will talk about the prototyped successor to the TR7A, some planned accessories, as well as other products in the incomplete "8-Series" Drake amateur radio equipment lineup.

Drake had hit the market by storm with the TR7. A bit like Collins, they were expensive, but they made huge gains in technology with the model – just as Collins had large technology gains with the S-Line separates and transceivers. To keep up with their very popular R-4C Receiver and T-4XC Transmitter and their similarly popular TR-4C Series Transceivers, Drake offered a receiver partner for the TR7 – that being the matching R7 Receiver. Unlike the unfortunate difference in the R-4C and TR-4C conversion schemes preventing a complete, transceive enabled pair, the TR7 and R7 could be interconnected in full transceive operation. Here are pictures of the TR7 and R7 for comparison:



Drake TR7 HF Transceiver (W9MXQ Shack Photo)



Drake R7 HF Receiver (RigReference Photo)

There once was a Drake R7 Receiver (R7A, actually) at W9MXQ, but it has not been here for many years. To say the R7 was a TR7 without a transmitter is a bit of a simplification to some unique features of the receiver. However, the conversion schemes were the same and the TR7 alone offered virtually all the features of a TR7 paired with the R7 except for these items . . .

1. There was a lack of a separate receive and transmit frequency separation beyond the RIT (Frequency Offset) feature of the TR7. This could be handled by using the optional RV7 External VFO, however.
2. The TR7 / R7 pair could allow for dual receive – a feature unavailable at the time in other radios. We covered dual receive in the past article covering the Hallicrafters SR-400 Transceiver (off the market by the time of the TR7 and R7.) This feature later came from Ten-Tec in the Corsair Transceiver and External VFO, three years after the TR7 and R7 were introduced.
3. The R7 Receiver offered a Notch Filter Circuit that was absent from the TR7. (Actually, I use a JPS NIR-12 Dual DSP Unit with my TR7A to add this feature.)

If it was 1980, again, and I was still using the TR7A and R7A Receiver in that long-ago station, I think I would certainly miss dual receive. In 2019 as I write this article, such requirements are satisfied by more advanced equipment at W9MXQ. In 1980, this was remarkable! I must be honest and say that I am not so sure that in 1980 I would have been the kind of operator that could appreciate the power of such things as dual receive. Thanks to some well-intentioned friends (primarily K9DJT² and W9XT³) who have coaxed me into the Contesting and DX worlds.

Let me inject a note here – the TR7 and TR7A as well as the R7 and R7A are nearly identical except for standard equipment from the factory. The “A” versions of both radios merely met a marketing challenge against the competition who included these features in their base price – there are very few technical differences other than a front-end protection circuit that would have meant very little to most operators.

Like the earlier R-4 / T-4X line of Receivers and Transmitters as well as the TR-3/4 series Transceivers, the TR7 and R7 used a permeably tuned oscillator – PTO – to tune the radio. I will use the term VFO. The analog dial mechanism appears as a slightly smaller version of the dual clear disk readout on the R-4C Receiver, T-4CX Transmitter, and TR-4 series Transceivers. No digital readout was necessary to read to an accuracy of less than one kHz. Both the initial TR7 and R7 products came in two forms – one with and one without the digital readout. The digital readout board in both the TR7 and R7 was called the DR7 Readout Board. Officially, Drake had these models available at introduction:

- Drake TR7 Transceiver Model 1337– with Analog Readout
 - List Price of \$1,200.00 in 1979¹
- Drake TR7/DR7 Transceiver Model 1336 – with Analog and Digital Readouts
 - List Price of \$1,395.00 in 1979¹ (TR7A \$1,839.00 in 1984⁵)
- Drake R7 Receiver Model 1241 – with Analog Readout Only
 - List Price of \$1,100.00 in 1979¹
- Drake R7/DR7 Receiver Model 1240 – with Analog and Digital Readouts
 - List Price of \$1,295.00 in 1979¹ (R7A \$1,649.00 in 1984⁵)
- Drake DR7 Digital Readout Model 1550 – for retrofit in Models 1337 and 1241
 - List Price of \$195.00 in 1979¹

The marketing of the Model 1337 TR7 Transceiver and Model 1241 R7 Receiver, as well as the separate Model 1550 DR7 Digital Readout, ended very early in the life of the products. Few, if any, radios left Drake without Digital Readout. Personally, I have never seen a TR7 or R7 without the DR7 Digital Readout installed.

The remarkable thing (one of two) about the TR7 and the R7 was what we now call, “Up-Conversion.” As mentioned in passing in last month’s installment, the first i-f of the radios was outside of the HF spectrum, into the VHF range. Early SSB radios focused on a 9.000 MHz i-f with variances over time, by brand – but all in HF. Drake, in fact, used 9.000 MHz as the i-f frequency in the TR-3 and TR-4 Transceivers that were predecessors to the TR7. The TR7’s first i-f was moved to 48.050 MHz. That placed images outside the tuning range of the TR7 and R7 receiving range. Images in conversion

schemes had long been a major problem for radio designers.

The other remarkable thing (two of two) about the TR7, and the R7, is that there is an 8 to 12 kHz wide crystal filter at that 48.05 MHz i-f. Drake inserted it for what were good design reasons. But, does anyone have an idea of what we call that filter, today? It is now called a Roofing Filter. I must say, however, that this “second remarkable thing” was not unique in the TR7 and R7 at Drake. That early stage filter, before the traditional i-f bandwidth filters, existed also on the R-4 series receivers – far ahead of others in the ham radio market. The R-4 series filter, in the 5 MHz range, was also what we would call a Roofing Filter. Even though it was only a four-pole crystal filter, it allowed better performance than could be expected from the tuned circuit bandwidth filters in the R-4, R-4A, and R-4B Receivers. Those tuned circuit filters were replaced in the R-4C with eight-pole crystal filters for each bandwidth position for even better performance.

Repeating from last installment, here is a look at a fully equipped Drake TR7 station that is typical of the late 1970's and early 1980's. This station is in regular operation, today, at W9MXQ:



Drake TR7 Line Station with Accessories

**Left to Right – MN-2700 Antenna Matching Network, TR7 Transceiver,
RV7 External VFO, and Drake L7 Linear Amplifier**

**Also Shown Left to Right – P75 Phone Patch, WH7 Wattmeter,
MS7 Speaker, SP75 Speech Processor – along with 7077 Desk Microphone
(W9MXQ Collection)**

We talked last month about market pressures that pushed Drake to offer some basic options in the TR7 as standard equipment in a “marketing upgrade” called the TR7A. At that time, the feeling was that the high market price of the TR7 could not continue without features that less costly competition offered. My personal feeling is that Drake still had a superior performing radio – but money talks and a lower price in ham radio can garner a lot of business.

In 1981, four years after the introduction of the TR7, Drake introduced the lower cost TR5 HF Transceiver. At \$799.95⁵, it was a considerable savings over the TR7A. The radio came in a cabinet the same size as the TR7A – absent only the punched grill area, for a left side mounted speaker – mounted on the bottom of the TR5. Let's take a different approach in describing the differences between the TR5 and TR7A and start with a list of the most important reasons a person bought a Drake TR7A:

- Digital Readout (not universally available when the TR7 was introduced in 1977)
- Digital Readout useable as a utility 150 MHz Frequency Counter
- Passband Tuning
- SSB/CW/AM Coverage
- Coverage from 0 to 30 MHz (yes, that is ZERO)

- Programmable, with appropriate proof of license) transmit segments in HF from 1.5 to 30 MHz – no gaps
- 240 watt (and more) input final amplifier (100 to 150 watts output)

Much of this was becoming standard equipment on the competition. So, how did the TR7A and the TR5 stack up to each other in a common market:

TR7 to TR5 Important Feature Comparison		
Feature	TR7 Transceiver	TR5 Transceiver
Digital Readout	Yes	Yes
Utility Frequency Counter	Yes – to 150 MHz	No
Passband Tuning	Yes	No
Modes	SSB/CW/AM	SSB/CW
General Coverage	Yes	No
General Coverage Transmit	Yes	No
Power Output (SSB PEP & CW)	100 to 150 watts	80 Watts

Several points here:

1. Drake's two Linear Amplifiers, the L7 and the L75, required a drive level of at least 100 watts for full output. The TR5's 80-watt final amplifier was widely criticized by owners and potential owners alike. What were they thinking?
2. Even low-cost competitors were trending to general coverage receivers – and therefore there was a need for AM mode capability.
3. The band coverage issue strictly for ham radio use was not so bad – even the upcoming WARC bands were covered on the bandswitch. Band heterodyne crystals were optional for the additional bands – a common practice in the marketplace. But, CAP, MARS, and other legal uses of ham radio equipment could not be accommodated.
4. The absence of not only Passband Tuning but also more than a single selectable, optional crystal filter made for an inflexible radio.

Drake promoted QSK (full break-in CW) as an important feature of the TR5. But, this was at a time when Ten-Tec had truly outstanding, and quiet QSK circuitry in radios in the TR5's price class. These Ten-Tec radios included the respected Omni A and D. (Ten-Tec, like Drake with the TR5, did not provide for General Coverage Receive.) The TR5, however, really did not have quiet QSK and users complained that the fast switching antenna relay was too noisy. Third party QSK modifications for the TR7 and TR5 were published at the time. None of these were sanctioned by Drake – at least not outwardly.

I think it is difficult for deluxe manufactures of any product to design a low-price version of the product(s). The TR5 may have been a case in point once it was determined what in the TR7 must remain unique to that product. Drake had never produced multiple price levels of transceiver at the same time – and likely should not have done so in 1981.

All comments aside on the TR5, many did like its simplicity – and that kind of customer thinking is around even now, just as it was then. The TR5 was more traditional in design and that also suited some potential customers. The most common negative comments were that its RF power level was too low and the receiver “had too many birdies⁴.”

Today's users certainly mention simplicity as part of their love their TR5's, TR7's and TR7A's – simple



The

to use in comparison to the modern day, memory intensive, microprocessor controlled, radios from Japan and the USA.

So, in closing, let me bring up one point on the TR7 and TR7A that might come to light if you buy one of these fine units. The transceivers include a feature to use the digital readout system as a 150 MHz Frequency Counter. This is quite handy, as mentioned earlier in this article. In at least two occasions when I acquired a TR7 Transceiver that was advertised as having a “non-working” frequency readout, I found that the switch on the rear panel, marked NORM-EXT, was in the EXT position. That meant the radio was setup in “Frequency Counter Mode.” On occasion, I have found the NORM-EXT slide switch to be defective, or at least has dirty contacts. This counter feature exists in the R7 and R7A Receivers as well. However, in the receiver, the Counter function is engaged differently and is not so problematic. Do you have a TR7 that seem to receive and transmit but with the readout showing only a single decimal point? Check that switch!

Next month we will talk about the unique end of the line for the TR7 and the TR5. We will also talk about efforts to replace the design with a more modern radio of similar concept, the Drake “8-Series” products, as well as accessories to match that effort.

A special thanks go to Bob, W9DYQ, for his proof reading. Remember that I am open to questions and comments at my email address, W9MXQ@TWC.com.

Reference Notes:

1. Source – 1979 R. L. Drake Price List. (Prices List original documents on file at W9MXQ.)
2. K9DJT is Gary Drasch.
 - a. Look for Gary at <https://www.k9djt.com/>
3. W9XT is Gary Sutcliffe.
 - a. Look for Gary at <http://www.w9xt.com/> and <https://www.unifiedmicro.com/>
4. A “birdie” is an extraneous/undesirable signal generated within the receiver circuitry.
5. Source – 1984 Amateur Electronic Supply Catalog (Drake List Price). (AES Catalog original documents on file at W9MXQ.)
6. Circuit details for Drake and other radios are taken from their respective Operating Manuals. (Manuals are on file at W9MXQ.)
7. For references to earlier R. L. Drake products, see previous articles about the Drake R-4 and T-4X, the Drake R-4C and T-4XC, the Drake TR3 and TR-4, and the one about the Drake TR-4 and TR-6.
8. There are three operating TR7’s Transceivers at W9MXQ – two TR7’s and one TR7A. One TR7 and the TR7A have optional filters including the 1800, 500, and 4000 Hz units plus the NB7 Noise Blanker. The other TR7 has no options installed at this time and “seems to operate when and if it pleases” due to numerous internal issues.

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The entire article is available on-line, see
http://www.gars.org/newsletters/2022_06_GARZETTE.pdf

GARS Membership

New Members List in May

Jim Barrett (KD4PDY)
William Carmichael (WA4EVQ)
Carey Fisher (WB4HXE)
David Lappen (KO4OWS)
Karen Lappen

New Members: 5

**Total Members as of
June 1, 2022
350**

Join GARS members for our weekly
breakfast gathering at
7:30 AM most Saturdays
Now at
Cracker Barrel Restaurant
75 Celebration Dr.
Suwanee, GA 30024

Birthdays in June

Gary Beckstedt (KN4VTA)
Mark Bell (N7GRB)
Harold Brown (KI4FPR)
William Carmichael (WA4EVQ)
Neil Cleveland (WB4OXY)
Hope Collier (KO4PVM)
John Davis (WB4QDX)
Jim Gaffney (K4YNA)
Cara Guidry
James Hinkle (AG4ON)
Joseph Keyes (K3YES)
Fisher Londono (W4LON)
Ralph Matchette (KE4IHD)
Rick Morris (KD4VOJ)
Lew Newlin (KM4YWK)
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GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message. To become a GARS member, or to renew your GARS membership, please visit our website – <http://www.gars.org>. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please e-mail your changes to the Membership Committee - membership@gars.org.

Membership Chair: Karen Albritton, KI4HPP
Committee Members: Dave Bruse, W4DTR

ARRL MEMBERSHIP

To update your ARRL membership information, please visit their website - <http://www.arrl.org>.

MAINTAIN YOUR LICENSE

You can update your Amateur Radio license information with the FCC at their website for free - <https://www.fcc.gov/wireless/universal-licensing-system>. License renewal is subject to the \$35 FCC fee.

Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Amazon Smiles;
- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

<http://gars.org/gars/donations-to-the-club>

GARS on Social Media



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<http://gars.org/groups.io>



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Rick Cobb, N4XY



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The

GARzette

GARS Meeting Minutes

Gwinnett Amateur Radio Society – GENERAL MEETING MINUTES

5/10/2022

In person and online meeting.

**President Joe Biddle (AD4PZ) and Opened the meeting
at 7:00pm and closed the meeting at approximately
9:00pm**

New hams and visitors: Joe (AD4PZ)

- First time visitors recognized
- New hams and upgrades recognized

Treasurer's Report: Pam (WB1AKQ)

Membership: Karen (KI4HPP)

- Karen reported 351 members

Education and apparel: Ralph (KJ4CNC)

- T-Shirt order form for Field Day is on the GARS site. Orders taken for 2 or 3 weeks. Get them in soon.
- The last weekend of July will be the General Ham Cram.
- Field day at McConnell Middle School will be Wednesday. They will be running on 2 and 20 meters.

VE Team: Dave (W4DTR)

- This last Sunday's exam resulted in three new Technicians and two upgrades to Extra.
- Ham Cram in July.
- The current Technician question pool expires this June 30.
- Dave answered an online question on what is Ham Cram.

ARES: Jamie (KX4HA)

- Gwinnett ARES is still meeting via Zoom on the 4th Tuesday of the month.
- Be on the lookout for Skywarn weather nets and training classes.

Programs: Kevin (K4GTR)

- June – Ice cream social at Harbin's Park for Field Day prep and social. In person only.
- July – Dallas will teach us how to build a 2 meter quad antenna.
- August – Winlink email via amateur radio presented by Mark Bell

Workshop: Dallas (N4DDN)

- Workshops are a mirror of the monthly program.

Memorial Day Parade: Earl (AF4FG)

- We line up the parade participants and send them on the way
- You only need a vest and an HT
- Sign up on the web site.
- This years parade will be bigger than usual.
- Meet at the church. Email with directions will be coming.
- You will get a GARS orange hat if you don't have one.

Field Day: (KA4KKF)

- Sign up on the site.
- We need two band captains. One for 40 meters sideband, and one for 20 meters CW.
- Help also needed picking up the food from the caterer.
- Everyone is invited.
- Brown bag and ice cream social in June. We will walk the site and inspect antenna locations.

Other:

- This Saturday is the PDK airshow. Free but for parking.
- Also this Saturday is the Alford Memorial swap meet off of LaVista.

Special Presentation: Ray Bailey - Phil (N4LNE) is a silent Key. Ray has been selling his equipment. As per Phil's wishes the sale of his radio equipment was presented to GARS in the amount of \$2,000. Joe (AD4PZ) accepted the gift on behalf of the club.

Program: Don Woodward (KD4APP) presented on recapping and restoring tube era radios.

Minutes prepared by club secretary Bill Hawkins (WR1TR) with the assistance of Pam (WB1AKQ) and Joe (AD4PZ).

Workshop Minutes - May 17, 2022

Number in Attendance: 12

Workshop Topic: Re-capping and tube testing to bring radios back to life

Presenter: Don Woodward KD4APP

Brief Summary: Don brought his Hallicrafters S-120, tube tester, and a bunch of documentation about them that he use in his restoration project. He also brought in the original and custom made bakelite rear and bottom panels for his Hallicrafters S-38B restore project. WOW they are a perfect match. Don also brought in his RIGOL Spectrum Analyzer for folks to test the spectral purity of their HF transmitters. Sadly the only transmitters to test were a few HTs. Kyle brought in his military surplus AN/TV-7D/U tube tester.

Events – GARS and others

ARRL CONTESTING INFO

From ARRL Contest Calendar
> For more information click the links <

2022	2023	January
1	1	Straight Key Night
1	7	Kid's Day
8-9	7-8	RTTY Roundup
15-17	21-23	January VHF Contest
February		
14-18	13-17	School Club Roundup
19-20	18-19	International DX – CW
March		
5-6	4-5	DX Contest -- SSB
April		
10	16	Rookie Roundup – Phone
May		
No planned contests		
June		
4-5	3-4	International Digital Contest
11-13	10-12	June VHF
18	17	Kid's Day
15-26	24-25	Field Day
July		
9-10	8-9	IARU HF World Championship
August		
6-7	5-6	222 MHz and Up Distance Contest
21-22	19-20	10 GHz & Up – Round 1
21	20	Rookie Roundup – RTTY
September		
10-12	9-11	September VHF
17-18	16-17	EME - 2.3 GHz & Up – Round 2
17-18	TBA	10 GHz & Up – Wknd 1
October		
15-16	TBA	EME - 50 to 1296 MHz – Wknd 2
17-21	16-20	School Club Roundup
November		
5-7	4-6	Nov. Sweepstakes - CW
12-13	TBA	EME - 50 to 1296 MHz
19-21	18-20	Nov. Sweepstakes - Phone
December		
2-4	1-3	160 Meter
10-11	9-10	10 Meter
18	17	Rookie Roundup–CW

For more information:
<http://www.arrl.org/contest-calendar>

HAMFEST CALENDAR

[Please confirm the status of a Hamfest before making plans to attend]

06/04/2022 - Atlanta Hamfest, ARRL Georgia State Convention

Location: Marietta, GA

Type: ARRL Convention

Sponsor: Atlanta Radio Club W4DOC & Kennehoochee ARC W4BTI

Website: <http://www.atlantahamfest.com>

06/11/2022 - 3rd Annual Pre-Field Day Tailgate Gathering

Location: Dade City, FL

Type: ARRL Hamfest

Sponsor: Dade City Masonic Lodge

06/18/2022 - Black Warrior Hamfest

Location: Northport, AL

Type: ARRL Hamfest

Sponsor: Black Warrior Hamfest

Website: <http://BlackWarriorHamfest.org>

07/09/2022 - K4KDI Summer Tailgate

Location: Orlando, FL

Type: ARRL Hamfest

Sponsor: South Conway Baptist Church

08/13/2022 - Fort Pierce Hamfest

Location: Fort Pierce, FL

Type:

Sponsor: Fort Pierce Amateur Radio Club

Website: <https://FPARC.ORG>

08/20/2022 - 08/21/2022 Huntsville Hamfest, ARRL SE Division Convention

Location: Huntsville, AL

Type: ARRL Convention

Sponsor: Huntsville Hamfest, Inc.

Website: <http://hamfest.org>

08/20/2022 - TARCfest

Location: Tampa, FL

Type:

Sponsor: Tampa Amateur Radio Club

Website: <http://www.hamclub.org>

09/10/2022 - Gadsden Amateur Radio Hamfest

Location: Attalla, AL

Type: ARRL Hamfest

Sponsor: Gadsden Amateur Radio Club

09/10/2022 - Prater's Mill Swapfest

Location: Dalton, GA

Type: ARRL Hamfest

Sponsor: Dalton Amateur Radio Club

Website: <https://www.facebook.com/groups/499173303579789/>

10/07/2022 - 10/08/2022 Melbourne Hamfest, ARRL Florida State Convention

Location: Melbourne, FL

Type: ARRL Convention

Sponsor: Platinum Coast Amateur Radio Society(PCARS)

Website: <http://pcars.org>

For more information: <http://www.arrl.org/hamfests-and-conventions-calendar>

When searching by division, remember some states adjacent to GA are in different divisions:

Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC



The

GARS Events Calendar for 2022		GARS Recurring Calendar
TechFest Winter Field Day Spring Technician HamCram Dog Show Fundraiser Georgia QSO Party North metro area Fox Hunt Memorial Day Parade ARC/KARC Hamfest Field Day Summer General HamCram JOTA Fall Technician HamCram Maker Faire Stone Mt. Hamfest Holiday Party	Cancelled for 2022 Jan 29-30 2022 March 26-27, 2022 March 30-April 3 2022 April 9-10 2022 April 2022 May 30 2022 June 4 2022 June 26-27 2022 July 2022 October 16-17 2022 October 2022 TBD November 6-7 2022 December 14 2022	<ul style="list-style-type: none">• 2nd Tuesday of the month at 7 pm (except December) Monthly Club Meeting 690 Airport Rd, Lawrenceville, GA 30046• 3rd Tuesday of the month at 7 pm (except December) Monthly Workshop 690 Airport Rd, Lawrenceville, GA 30046• 2nd Sunday of the Month at 2 pm GARS Ham Exam Session 690 Airport Rd Lawrenceville, GA 30046• Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeater• Every Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeater• Most Saturdays at 7:30 am : GARS Weekly Breakfast Cracker Barrel Restaurant 75 Celebration Dr., Suwanee, GA 30024
GARS CALENDAR FOR June 2022		

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4 Breakfast at Cracker Barrel in Suwanee 7:30 AM
5	6 7:30 – 8:00 PM GARS 2M Net	7 7:00 PM GARS Exec Meeting (Online)	8	9	10	11 Breakfast at Cracker Barrel in Suwanee 7:30 AM
12 GARS VE Exam Session EAA 690 Hangar 2:00 PM	13 7:30 – 8:00 PM GARS 2M Net	14 7:00 PM GARS Meeting Harbins Park	15	16	17	18 Breakfast at Cracker Barrel in Suwanee 7:30 AM
19	20 7:30 – 8:00 PM GARS 2M Net	21 7:00 PM GARS Workshop EAA 690 Hangar	22	23	24	25 Cracker Barrel Breakfast in Suwanee 7:30 AM Field Day at Harbins Park
26 Field Day at Harbins Park	27 7:30 – 8:00 PM GARS 2M Net	28	29	30		



The

Local Ham Radio Exams & Meetings

GARS Ham Radio Exams

Second Sunday of the month

Doors open at 1:45pm, exams start promptly by 2:00pm

GARS VE-Team

VEC: W5YI-VEC

EAA 690 Hangar

690 Airport Rd

Lawrenceville, GA 30046

GARS VE Team Leaders

E-mail: exams@gars.org

May 2022 Results

We had 5 applicants test today, Sunday, May 8, 2022.

Exam session results:

- 3 new Technicians
- 2 upgrades to Amateur Extra

Special thanks to our Volunteer Examiners who made today's exam session possible:

Earl, AF4FG

Russell, AB4QQ

Frank, KV4SP

Don, KK4NJM (Co-CVE)

and myself, Dave Bruse, W4DTR (CVE)

GARS VE Website: <http://gars.org/exams> has location information and testing requirements.

Local Ham Radio Exams

In order to find an exam session near you, please visit

http://www.arrl.org/exam_sessions/. Contact the information in the listing for further information.



Local Ham Radio Meetings

In order to find a local Ham Radio Club meeting near you, please visit

<http://www.arrl.org/find-a-club>. Contact the club for meeting information.



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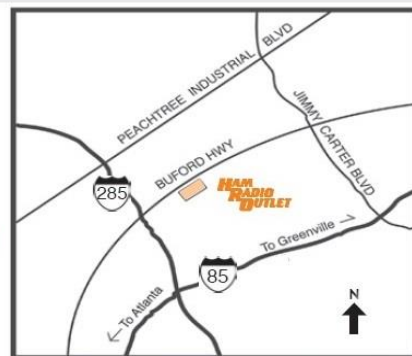
If your closest 800 number is busy, please call one of our other numbers.

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Email: atlanta@hamradio.com

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